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PUBLIC HEALTH ENGINEERING ABSTRACTS.

Report of the Department of Health and Sanitation of the U. S. Shipping Board for the period November 16, 1917, to November 15, 1918.—Lieut. Col. Philip Schuyler Doane, M. C., U. S. A.—*The Military Surgeon*, vol. 47, No. 4, October, 1920, pp. 389–406.

The functions of the Department of Health and Sanitation of the Shipping Board included such measures as were found necessary to govern sanitary conditions for the shipworkers in the yards as well as in their living and eating places and to provide dispensaries and hospitals and medical and sanitary supervision covering all shipyards in the country. In every yard, supervision was necessary in the matter of water supply, housing, drainage, sewage disposal, and general sanitary environment. In the water supply specifications issued to the yards, the department insisted that surface water from streams and lakes should never be used without purification; wherever possible the yards should use a water supply of established purity in a near-by city; shallow wells should be used only when absolutely free from soil or surface contamination; walls of the well should extend above the surface with a provision for drainage that would carry surface water away from the well; bacteriological and chemical analyses should be made at regular intervals by reputable laboratories, copies being sent to the Emergency Fleet Corporation. Not only the source but also the distribution of the water called for close watching.

One of the difficulties frequently encountered was the interconnection between the water mains carrying drinking water and those conveying impure water for industrial use and for fire protection. Where such interconnection was absolutely necessary and was accepted by the Department of Health and Sanitation and the local health authorities, an improved type of connection, consisting of two check valves, three pressure gauges, and two blow-offs, was specified, and monthly examinations were made to test the tightness of these check valves.

The war against the disease-carrying mosquito involved expenditures of \$800,000, practically all being contributed by various outside organizations.

The effectiveness of the department's work is shown by the fact that in no case has a general cessation of work due to disease occurred in any of the yards, and there was no epidemic of typhoid, small-pox, or other virulent disease, with the exception of influenza.

Sanitary conditions in Vladivostok.—Lieut. A. S. Judy, M. C., U. S. N.—*Medical Bulletin*, vol. 14, No. 4, October, 1920, p. 9.

The population of Vladivostok was 60,000 before the war, and has increased to about 400,000, owing to the presence of refugees and

allied troops. Conditions are most conducive to the spread of disease. An epidemic, such as cholera, would be difficult to arrest. The ignorant defecate and urinate on almost any street at any hour, the material remaining until washed away by melting snow or rains. Water is obtained from wells, both public and private. In November, 1919, 70 cases of typhoid were traced to a polluted well water. Only 10 per cent of the city is sewered. Typhus fever is endemic, several thousand cases occurring in 1920. Four hundred cases of cholera occurred in 1919. Food is handled and prepared under very insanitary conditions.

The farm woman tells her own story.—Florence E. Ward—*Domestic Engineering*, vol. 93, No. 4, October 23, 1920, p. 161.

The United States Department of Agriculture made a survey recently of 10,000 farm houses regarding sanitary conditions, with results as shown in the following table.

Section of country.	Without running water (necessary to carry).		With running water.	Power machinery.	Water in kitchen.	Sink and drain.	Outdoor toilet	Bathtub.
	Per cent.	Distance carried.						
Eastern.....	54	<i>Feet.</i> 23	<i>Per cent.</i> 39	<i>Per cent.</i> 12	<i>Per cent.</i> 67	<i>Per cent.</i> 80	<i>Per cent.</i> 87	<i>Per cent.</i> 21
Central.....	68	41	24	29	47	52	93	18
Western.....	57	65	36	22	18	44	86	23
Average.....	61	39	32	22	48	60	90	20
Number of records...	6,511	6,708	9,320	9,080	6,949	9,331	9,580	6,784

Septic tanks for unsewered districts.—C. Edward Keefer, Engineer, Highways Department, Baltimore, Md. —*Public Works*, vol. 49, No. 17, October 23, 1920, p. 388.

In view of the annexation by the city of Baltimore in 1919 of about 60 square miles, a considerable area of which was unsewered, it has been found advisable to install temporary septic tanks treating the sewage from various districts in this area. Septic-tank installations were decided upon in view (1) of the greater supervision required for Imhoff tanks, which are often erratic in operation; (2) the removal of sludge by carts, thereby eliminating one of the chief advantages for Imhoff tanks; and (3) the greater cost of Imhoff tank installations. The design of the larger septic tanks is based on a minimum flow of 80 gallons per capita per day, a detention period of 8 hours with a foot of sludge in the shallower end of the tank, assuming an operating period of 18 out of 24 hours.

Studies on the corrosive action of chlorine-treated water.—George L. Clark and R. B. Iseley, Vanderbilt University, Nashville, Tenn.—*Journal of Industrial and Engineering Chemistry*, vol. 12, No. 11, November, 1920, pp. 1116–1122.

This paper, as a preliminary to more practical work on the corrosive action upon living organisms and upon metal containers and pipes, discusses (a) the solution of chlorine in water under (1) methods of analysis; (2) equilibrium in the system; (3) effect of iron on equilibrium; (4) interpretation of results; and (b) corrosion of iron and steel under (1) nature and extent; (2) interpretation; (3) secondary effects. Tests were made with low-carbon steel bars of similar composition immersed in solutions of Cumberland River water, city reservoir water, which is simply the river water treated with alum in settling tanks, and distilled water. The results showed that the corrosive action is greater in the light than in the dark, owing to the greater completeness of reactions involving the decomposition of HOCl in light to form HCl and oxygen. It was also found that corrosion usually increased with increase in chlorine content in the order: river, reservoir, distilled water.

DEATHS DURING WEEK ENDED OCT. 30, 1920.

[From the "Weekly Health Index," Nov. 2, 1920, issued by the Bureau of the Census, Department of Commerce.]

Deaths from all causes in certain large cities of the United States during the week ended Oct. 30, 1920, infant mortality (per cent), annual death rate, and comparison with corresponding week of preceding years.

City.	Population Jan. 1, 1920, subject to revision.	Week ended Oct. 30, 1920.		Average annual death rate per 1,000. ¹	Per cent of deaths under 1 year.	
		Total deaths.	Death rate. ¹		Week ended Oct. 30, 1920.	Previous year or years. ²
Akron, Ohio.....	208,435	28	7.0	³ 8.9	17.9	³ 15.9
Albany, N. Y.....	113,344	25	11.5	C 13.0	24.0	C 3.6
Atlanta, Ga.....	200,616	59	15.3	C 13.4	16.9	C 3.9
Baltimore, Md.....	733,826	194	13.8	A 14.9	16.0	A 17.0
Birmingham, Ala.....	178,270	45	13.2	A 17.9	15.6	A 12.9
Boston, Mass.....	747,923	193	13.5	A 15.6	16.1	A 17.8
Bridgeport, Conn.....	143,152	34	12.4	A 13.4	35.3	A 20.4
Buffalo, N. Y.....	506,775	137	14.1	C 11.4	19.7	C 20.9
Cambridge, Mass.....	109,456	27	12.9	A 13.6	14.8	A 13.0
Chicago, Ill.....	2,701,705	498	9.6	A 12.2	17.7	A 15.9
Cincinnati, Ohio.....	401,247	87	11.3	C 11.6	9.2	C 7.9
Cleveland, Ohio.....	796,836	160	10.5	C 9.6	20.6	C 22.9
Columbus, Ohio.....	237,031	52	11.4	C 10.7	19.2	C 10.4
Dallas, Tex.....	158,976	26	8.5	A 13.0	19.2	A 14.3
Dayton, Ohio.....	153,830	22	7.5	C 11.7	9.1	C 14.7
Denver, Colo.....	256,491	72	14.6	A 13.2	11.1	.....
Detroit, Mich.....	993,739	166	8.7	.....	28.3	.....
Fall River, Mass.....	120,485	31	13.4	C 11.7	32.3	C 37.0
Grand Rapids, Mich.....	137,634	28	10.6	C 13.4	25.0	C 17.1
Hartford, Conn.....	138,036	29	11.0	.....	6.9	.....
Indianapolis, Ind.....	314,194	76	12.6	C 11.9	15.8	C 11.3
Jersey City, N. J.....	298,079	77	13.5	C 13.5	24.7	C 15.6
Kansas City, Kans.....	101,177	21	10.8	.....	19.0	.....
Kansas City, Mo.....	324,410	85	13.7	C 15.3	12.9	C 19.1
Los Angeles, Calif.....	576,673	144	13.0	A 11.3	10.4	A 10.5
Lowell, Mass.....	112,479	30	13.9	A 17.1	43.3	A 19.7
Memphis, Tenn.....	162,351	66	21.2	C 18.5	7.6	C 15.1
Milwaukee, Wis.....	457,147	86	9.8	A 10.7	23.3	A 19.1
Minneapolis, Minn.....	380,582	65	8.9	C 9.6	13.8	C 7.2
Nashville, Tenn.....	113,342	44	19.4	C 13.3	20.5	C 13.3
Newark, N. J.....	414,216	76	9.6	C 10.4	18.4	C 19.5
New Bedford, Mass.....	121,217	29	12.5	A 15.2	24.1	A 30.4
New Haven, Conn.....	162,519	25	8.0	C 14.6	16.0	C 13.3

¹ Annual rates per 1,000 population.

² "A." indicates data for the corresponding week of the years 1913 to 1917, inclusive. "C" indicates data for the corresponding week of the year 1919.

³ Data are based on statistics of 1915, 1916, and 1917